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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/541,431

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Ermanno Filippi

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05/05/2008

AKERMAN SENTERFITT

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EXAMINER

NGUYEN, HUY TRAM

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

05/05/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/541,431	Applicant(s) FILIPPI ET AL.	
	Examiner HUY-TRAM NGUYEN	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>July 5, 2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by **Zardi (US Patent No. 4,769,220)**.

Regarding Claim 1, Zardi reference discloses a pseudo-isothermal radial chemical reactor for catalytic reactions, comprising a substantially cylindrical shell (2) **(Figure, numeral M)** closed at the opposite ends by respective base plates (3 and 4) **(Figure, top and bottom)**, a reaction zone (8) **(Figure, C1 and EX1)** in which a respective catalytic bed (11) **(Figure, C1)** and a plurality of heat exchangers (22) placed in said reaction zone (8) are supported **(Figure, EX1)**, characterised in that it comprises at least one second further reaction zone (26) **(Figure, C2 and EX2)** comprising a respective catalytic bed (29) **(Figure, C2)** and a plurality of heat exchangers (36) placed in said second reaction zone (26) **(Figure, EX2)**, said first and said second reaction zone (8 and 26) being in fluid communication with each other **(Figure, downward arrows)**.

Regarding Claim 2, Zardi reference discloses the chemical reactor according to claim 1, characterised in that said first and said second reaction zone (8 and 26) are associated in series **(Figure)**.

Regarding Claim 3, Zardi reference discloses the chemical reactor according to claim 2, characterised in that the plurality of heat exchangers (22) of at least one of said reaction zones (8, 26) is in fluid communication with the outside **(Figure and Column 2, Line 29-Column 3, Line 15)**.

Regarding Claim 4, Zardi reference discloses the chemical reactor according to claim 3, characterised in that the pluralities of heat exchangers (22, 36) of both of said reaction zones (8, 26) are in fluid communication with each other **(Figure)**.

Regarding Claim 7, Zardi reference discloses the method for optimising pseudo-isothermal catalytic reactions, comprising the steps of feeding reactants to a reaction zone (8) **(Figure and Column 2, Lines 29-40)** comprising a catalytic bed (11) **(Figure, C1)** and a plurality of heat exchangers (22) placed in said catalytic bed (11) **(Figure, EX1)**, characterised in that it comprises the further steps of collecting reactants and products coming from the reaction zone (8) **(Figure and Column 2, Lines 41-46)**, conveying said reactants and products to a second reaction zone (26) **(Figure and Column 2, Line 46-63)** comprising a respective catalytic bed (29) **(Figure, C2)** and a respective plurality of heat exchangers (36) **(Figure, EX2)** placed in said catalytic bed (29), feeding said reactants and products to said second reaction zone (26) and completing the reaction in said catalytic bed (29) **(Figure and Column 16-17)**.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Zardi (US Patent No. 4,769,220) in view of Dang Vu et al. (US Patent No. 5,035,867)**

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Regarding Claims 5 and 6, Zardi reference discloses the chemical reactor according to claims 4 and 5 respectively except for one exchanger of said pluralities of heat exchangers (22, 36) is plate-shaped, rectangular and boxed and the heat exchangers being arranged radially, coaxially with respect to the axis (A-A) of the reactor. Dang Vu et al. reference discloses the similar heat exchangers **(Figures 1, 2 and 3)**. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the heat exchangers of Dang Vu et al. in place of the heat exchangers of Zardi since the equivalence of heat exchangers of Dang Vu et al. and Zardi for their use in the heating/cooling art and the selection of any of these known equivalents to heat transfer would be within the level of ordinary skill in the art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUY-TRAM NGUYEN whose telephone number is (571)270-3167. The examiner can normally be reached on MON- THURS: 6:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HTN
5/1/08

/Walter D. Griffin/
Supervisory Patent Examiner, Art Unit 1797